REMARKS

[0001] Claims 1-19 have been allowed in U.S. Patent No. 6,718,445 ('445 patent) issuing from Applicant's application identified above.

[0002] Applicants submit that Claims 1-19 are patentable over references, U.S. Patent No. 5,717,951, U.S. Patent No. 5,454,103, and U.S. Patent No. 5,247,660 (referred to hereinafter respectively as the "'951 patent", "'103 patent", "'660 patent" and collectively as "the unconsidered references") which are the basis for the re-examination order.

'951 Patent – teachings

[0003] The '951 patent relates to data storage technology. Specifically, the '951 patent describes technology for management of data blocks having variable encoded block sizes. The '951 patent takes data in files and divides the file into blocks of variable sizes. The format for the block is encoded into the block size. Descriptive data related to the block is stored in a staging area of memory. See '951 Fig. 20. The '951 patent teaches movement of data in and out of non-persistent memory. The '951 patent may be construed to teach comparing one size to a maximum size. See '951 patent Figure 11, col. 15, line 40 – col. 16 line 27.

'103 Patent – teachings

[0004] The '103 patent relates to file systems and data storage space allocation technology. Specifically, the '103 patent describes technology for storage and allocation of storage space for both small and large files in a single file system. The '103 patent takes data in files and allocates storage space from a set of small allocation units and a set of large allocation units. See '103 patent col. 7, lines 38-61. The '103 patent dynamically varies the sizes of storage allocation units based on predetermined maximum size values. See '103 patent Abstract. The '103 patent makes dynamic use of space (different allocation units) in reference to maximum values. The '103 patent may be construed to teach a buffer manager in the form of a file control processor. See '103 patent col. 7, lines 29-37.

'660 Patent – New Question of Patentability

[0005] The '660 patent relates to virtual memory storage and dynamic allocation of data therein.. Specifically, the '660 patent describes technology for storage and allocation of storage space. The '660 patent manages allocation of data file sets among persistent storage. See '660 patent col. 8, lines 21-35. The '660 patent dynamically expands the size of file sets and the number of volumes in a volume set. See '660 patent col. 8, lines 6-18. The '660 patent makes dynamic allocations of space in response to growing storage needs.

'445 Patent – Claims distinguish over the unconsidered references

[0006] While the '951, '103, and '660 patents are related sufficient to raise new questions of patentability, Applicants respectfully assert that the independent Claims 1, 9, 14, and 17 distinguish over these references. In particular, Claim 1 recites a buffer. Those of skill in the art recognize a buffer as a temporary storage location. Data is stored in such a location for a comparatively short period of time. Conversely, the references relate to more permanent storage such as disk drives, optical drives, and files. Specifically, the '445 patent recites buffer management. Buffers typically change content very dynamically, where files and file storage changes comparatively little in the same time period. Such a difference in timing raise technical considerations that distinguish buffers from files and file allocation.

[0007] Furthermore, none of the references teach, describe, or suggest, three main elements of the '445 patent independent claims. Specifically, Claim 1 recites a buffer pool having fixed storage and virtual storage, a target maximum fixed value, and a target maximum virtual value. Applicants find no references to virtual or logical storage values in the references. Instead, the references refer to storage structures or storage data. The '951 patent refers to virtual blocks and logical data blocks. See '951 patent col. 6, lines 44-50. The '660 patent refers to logically-related data. See '660 patent col. 5, lines 50-52. The '103 patent refers to logical storage allocation units. See '103 patent Abstract. These are either storage structures or data which is distinct from a target maximum fixed value and a target maximum virtual value which represent storage size maximums.

[0008] The '445 patent also claims specific virtual and logical storage values. In Claim 1, a target maximum fixed value and a target maximum virtual value are recited. The '103 patent recites a maximum small allocation unit size. See '103 patent Abstract. The '660 patent refers to a maximum number of volumes. See '660 patent col. 5, lines 53-60. However, Applicant has not found in any of these references a teaching that the sizes, values, or numbers are "target" values. In addition, Claim 1 further recites that these target values are dynamically alterable by a system administrator. Applicants have found no teaching in the references that a target maximum fixed value or target maximum virtual value be dynamically altered.

[0009] Finally, Claim 1 recites a buffer manager that compares present usage of fixed storage and virtual storage to target maximum fixed and target maximum virtual values. This comparison is used to dynamically vary the amount of fixed storage and virtual storage. In this manner, the claimed invention adapts to fixed and virtual storage needs dynamically and in relation to maximum values. Applicants found no such comparison or dynamic adjustment taught or suggested in the references.

[0010] The '951 patent compares one size to a maximum size and refers to a maximum allowable data block size. See '951 patent Claim 14, Figure 11, col. 15, line 40 – col. 16 line 27. However, in the '951 patent, a file size is compared to a maximum block size. This comparison is very different from the comparison of present storage usage to maximum target values for fixed and virtual storage. The '103 patent makes dynamic use of space (different allocation units) in reference to maximum values. See '103 patent Abstract. However, Claim 1 dynamically varies the amount of fixed and virtual storage space where the '103 patent simply varies which predefined allocation unit of a particular size to select. Varying space is functionally very different from selecting among predefined storage structures.

[0011] Therefore, Applicants respectfully submit Claim 1 distinguishes over the unconsidered references. As noted above, Claims 9, 14, and 17 and the respective dependent claims, recite substantially the same subject matter such that these claims are distinguishable over the unconsidered references for at least the same reasons.

[0012] Therefore, in view of the distinctions discussed above, while a new question of patentability may be raised based on the similarities between the references and the '445 patent, Applicants submit that the claims distinguish over the references.

Copy of the Request

[0013] Applicants filing this request are represented by the patent attorney signing below and are the true owner of U.S. Patent No. 6,718,445. Ownership of the patent by the Applicants is evidenced by the assignment record by the Patent Office on May 27, 1999 on Reel 9985 at Frame 766. Therefore, Applicants have not sent a copy of the request to any other party.

[0014] In view of the foregoing, Applicants request that a decision be made in regard to this re-examination in accordance with established Office procedure. In the event any questions remain, a telephone conference may be initiated with the undersigned.

Respectfully submitted,

David J. McKenzie
Reg. No. 46,919
Attorney for Applicant

Date: January 28, 2005
8 East Broadway, Suite 600
Salt Lake City, UT 84111
Telephone (801) 994-4646
Fax (801) 322-1054

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